



TENNESSEE DEPARTMENT OF

EDUCATION
FIRST TO THE TOP

Computer Applications

Primary Career Cluster:	Business Management & Administration
Consultant:	Casey Haugner Wrenn, (615) 532-4879, Casey.Haugner@tn.gov
Course Code(s):	5891, 3638
Prerequisite(s):	None
Credit:	1
Grade Level:	8-12
Graduation Requirements:	This course satisfies one of three credits required for an elective focus when taken in conjunction with other Business courses.
Programs of Study and Sequence:	This is the first course in the <i>Office Management</i> program of study.
Aligned Student Organization(s):	DECA: http://www.decatn.org ; FBLA: http://www.fblatn.org Sarah Williams, (615) 532-2829, Sarah.G.Williams@tn.gov
Coordinating Work-Based Learning:	Teachers are encouraged to use embedded WBL activities such as informational interviewing, job shadowing, and career mentoring. For information, visit http://tn.gov/education/cte/work_based_learning.shtml .
Available Student Industry Certifications:	None
Dual Credit or Dual Enrollment Opportunities:	Some local dual enrollment/dual credit opportunities exist. Please check with the local college of applied technology or community college for options.
Teacher Endorsement(s):	030, 033, 037, 039, 041, 052, 054, 055, 057, 152, 153, 158, 201, 202, 203, 204, 311, 430, 431, 432, 434, 435, 436, 471, 472, 474, 475, 476
Required Teacher Certifications/Training:	None
Teacher Resources:	http://www.tn.gov/education/cte/BusinessManagementAdministration.shtml

Course Description

Computer Applications is a foundational course intended to teach students the computing fundamentals and concepts involved in the use of common software applications. Upon completion of this course, students will gain basic proficiency in word processing, spreadsheets, databases, and presentations. In addition, students will have engaged in key critical thinking skills and will have practiced ethical and appropriate behavior required for the responsible use of technology. Standards in this course are

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aligned with Tennessee State Standards for Literacy in Technical Subjects and Tennessee State Standards in Mathematics.*

Program of Study Application

This is the foundational course for the *Office Management* program of study. For more information on the benefits and requirements of implementing this programs in full, please visit the Business Management and Administration website at <http://www.tn.gov/education/cte/BusinessManagementAdministration.shtml>.

Course Standards

Communication Networks, the Internet, and Technology Operations

- 1) Research recent developments in information technology affecting the supply/demand characteristics of the job market, including career pathways and occupational outlooks for occupations in business and finance that require information technology expertise. Synthesize findings into a presentation highlighting the typical roles and responsibilities of professionals in high-growth occupations. (TN Reading 1, 2, 7, 9; TN Writing 4, 6, 7, 8, 9)
- 2) Identify, connect, and demonstrate the correct usage of elements of a typical home computer, including a monitor, keyboard, mouse, network cable, and USB devices (such as camera, memory, or scanner). Perform basic troubleshooting as needed for situations involving these components (e.g., if the computer does not recognize a device). (TN Reading 3, 4)
- 3) Correctly and safely execute basic file management operations on a typical personal computer and shared storage media, including the opening, creating, copying, moving, deleting, and renaming of files and folders, as well as searching for a specified file or folder on local or networked storage media. (TN Reading 3)
- 4) Describe and demonstrate the correct connections and setup for a new wireless router in a home computing environment. Discuss the impact of network speeds, wireless communication, firewalls, and gateways on individual and societal productivity. (TN Reading 3, 4)
- 5) Describe the steps necessary to retrieve, download, and safely install new applications, updates, and plug-ins from the Internet. (TN Reading 3)
- 6) Compare and contrast the accessibility of the Internet through a home router versus through a public wi-fi access point. Discuss the risks and advantages of using secure home networks versus publicly accessible networks. (TN Reading 1, 4, 8, 9)
- 7) While preparing materials and assignments in this course, use a browser to access and download Internet resources by uniform resource locator (URL), hyperlink, or favorite/bookmark.

Word Processing and Publishing

- 8) Use a word processing program to create and format documents with academic and business styles (e.g., memos, letters, agendas, reports, tabular lists) to communicate the results of research, meetings, lab reports, and relevant assignments in this course. (TN Reading 3, 7; TN Writing 2, 4, 6)
- 9) Craft documents using word processing program features and methods such as:
 - a. Paragraph formatting (line spacing, justification, indentations)
 - b. Bulleted and numbered lists
 - c. Tables of multiple columns, with and without borders
 - d. Margins, headers, footers, page numbers, and footnotes
 - e. Typeface fonts and weights, including hyperlinks
 - f. Capitalization, punctuation, number expression, grammar
 - g. Printing orientation, one- or two-sided, to a selected printer
 - h. Bibliographies and tables of contents
 - i. Saving to a file that can be shared and/or transported, including saving to cloud-based or external sources(TN Reading 3, 4, 7; TN Writing 2, 4, 6)
- 10) Enhance documents by including graphic arts components such as borders and shaded elements, graphs and charts from other programs, watermarks, and imagery imported from technology devices and drives as well as sources retrieved from the Internet, including adding citations and/or captions for each element when appropriate. (TN Reading 3, 7; TN Writing 4, 5, 6)
- 11) Create, format, and edit documents suitable for print or electronic distribution, both four-color and two-color (black and white). (TN Reading 3; TN Writing 4, 5, 6)
- 12) Critique and edit existing documents with standard proofreading and editing marks to conform to a standard business style guide (e.g., fonts, colors, line spacing). Practice the use of electronic revision marks and comments, where supported. (TN Reading 1, 2, 5, 6, 8, 9; TN Writing 4, 5, 6)
- 13) Complete a comprehensive word-processing project with instructor approval that applies the skills acquired in this section. For example, prepare a contract, MLA-style report, business proposal, or budget report from a student organization. (TN Writing 4, 6, 7)

Spreadsheet Applications

- 14) Use a spreadsheet program to create and format academic and business documents for the purposes of tabulating and calculating numerical and/or textual data (e.g., statistics, historical data, measurements), such as budget calculations, sales reports, lab data, and related analyses. (Reading 1, 3, 4, 5, 7, 9; TN Writing 4, 6; TN Math N-Q, S-ID)
- 15) Craft documents using a spreadsheet program using features and methods such as:
 - a. Cells, columns, and rows
 - b. Formulas and functions

- c. Copy, move, delete, and fill
 - d. Cell-value formats (numerical and text) and alignment
 - e. Column and row width/height, insert/delete, move
 - f. Printing to a selected printer
 - g. Saving with a file format that can be shared and/or transported
- (TN Reading 3, 4, 5; TN Writing 4, 6; TN Math N-Q, S-ID)

16) Create new formulas to analyze data by calculating with, extracting from, presenting, and/or summarizing, including:

- a. Basic arithmetic calculations
- b. Basic mathematic (e.g., SUM, AVG, MIN, MAX) and text (e.g., LEN, LEFT, RIGHT, MID) functions
- c. Copying formulas that include both relative and absolute cell references
- d. Sorting in ascending/descending order
- e. Filtering data to retrieve specific values
- f. Basic conditional formatting (e.g., red for negative values)

(TN Reading 3, 4, 5; TN Writing 6; TN Math N-Q, S-ID)

17) Create and format for optimal clarity a variety of types of graphs and charts, including bar charts, line charts, pie charts, and X-Y graphs, based on tabulated data. (TN Reading 3, 4, 7; Writing 4, 5, 6; TN Math N-Q, S-ID)

18) Retrieve a spreadsheet template (from those installed with the program or from the Internet) and customize it for a particular assignment approved by the instructor. For example, prepare a “timecard” of one’s daily hours spent on a month-long job assignment. (TN Writing 6)

Database Applications

19) Use a database program to interpret the structure of an existing database (found in teaching resources or teacher-created), identifying tables, fields, key fields, queries, forms, and reports. (TN Reading 1, 3, 4, 5, 7)

20) Using an existing database (found in teaching resources or teacher-created), create and run a database report based on basic queries. For example, retrieve the relevant information to answer a customer product inquiry during a mock customer service phone call. (TN Reading 3; TN Math N-Q, S-ID)

21) Using an existing database (found in teaching resources or teacher-created), create, modify, and perform basic queries through a form to create a new table/view in a database. (TN Reading 3; TN Math N-Q, S-ID)

Presentation Software

22) Design, create, and deliver an oral presentation for a selected audience on a topic approved by the instructor. Using a specified slide number and duration, include the following elements:

- a. A selected theme (colors, background, fonts, etc.)
- b. Bulleted text based on a chosen style
- c. Photographs and other imagery

- d. Charts and graphs
 - e. Video and animated graphics
 - f. Animated transitions of slides and components within a slide
- Save the file in a format that can be transported and shared with the audience. (TN Writing 4, 6, 7)

- 23) Design, create, and deliver a self-running electronic slideshow for a selected audience on a topic approved by the instructor. Using a specified slide number and duration, include the following elements:
- a. A selected theme (colors, background, fonts, etc.)
 - b. Photographs and other imagery
 - c. Video and animated graphics
 - d. Animated transitions of slides
- Save the file in a format that can be transported and shared with the audience. (TN Writing 4, 6, 7)

Digital Citizenship

- 24) Research, summarize, and deliver (via presentation, document, spreadsheet data/chart, or other format) a summary of the various perspectives and ramifications surrounding an ethical issue related to modern-day electronic communications, as approved by the instructor. Develop and strengthen claim(s) and counterclaim(s) about the issue, citing supportive evidence. Potential issues include spam, flaming, cyberbullying, libel, slander, and mining of personal data for profit. (TN Reading 1, 2; TN Writing 1, 4, 6, 7)
- 25) Research, summarize, and deliver (via presentation, document, spreadsheet data/chart, or other format) a summary of the various perspectives and ramifications surrounding an ethical issue related to intellectual property rights, as approved by the instructor. Develop and strengthen claim(s) and counterclaim(s) about the issue, citing supportive evidence. Potential issues include copyright infringement, piracy, plagiarism, art licensing, creative commons, and the state/federal laws that govern them. (TN Reading 1, 2; TN Writing 1, 4, 6, 7)
- 26) Explain, furnish examples, and demonstrate technical literacy with the following terms:
- a. The Internet, World Wide Web, and various browsers
 - b. Network speeds, wireless communication, firewalls, and gateways
 - c. Domains, hyperlinks, homepages, favorites/bookmarks, plugins, tabs, and downloads/uploads

Electronic Communication and Collaboration

- 27) Employ skills covered in this course (document processing, spreadsheet applications, electronic presentations, databases, Internet fluency) to complete a cross curricular project approved by the instructor. (TN Writing 6, 7)

Standards Alignment Notes

*References to other standards include:

- TN Reading: [State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects](#); Reading Standards for Literacy in Science and Technical Subjects 6-12 (page 62).
 - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standard 10 at the conclusion of the course.
- TN Writing: [State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects](#); Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6-12 (pages 64-66).
 - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standards 3 and 10 at the conclusion of the course.
- TN Math: [State Standards for Mathematics](#); Math Standards for High School: Numbers and Quantity, Statistics and Probability.
 - Note: The standards in this course are not meant to teach mathematical concepts. However, the concepts referenced above may provide teachers with opportunities to collaborate with mathematics educators to design project-based activities or collaborate on lesson planning, depending on the projects used in each situation (for example, spreadsheets). Students who are engaging in activities listed above should be able to demonstrate quantitative and statistical reasoning as applied to specific technical concepts. In addition, students will have the opportunity to practice the habits of mind as described in the eight Standards for Mathematical Practice.
- P21: Partnership for 21st Century Skills [Framework for 21st Century Learning](#)
 - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.